

# Hobbies

## WEEKLY

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November 1st, 1950

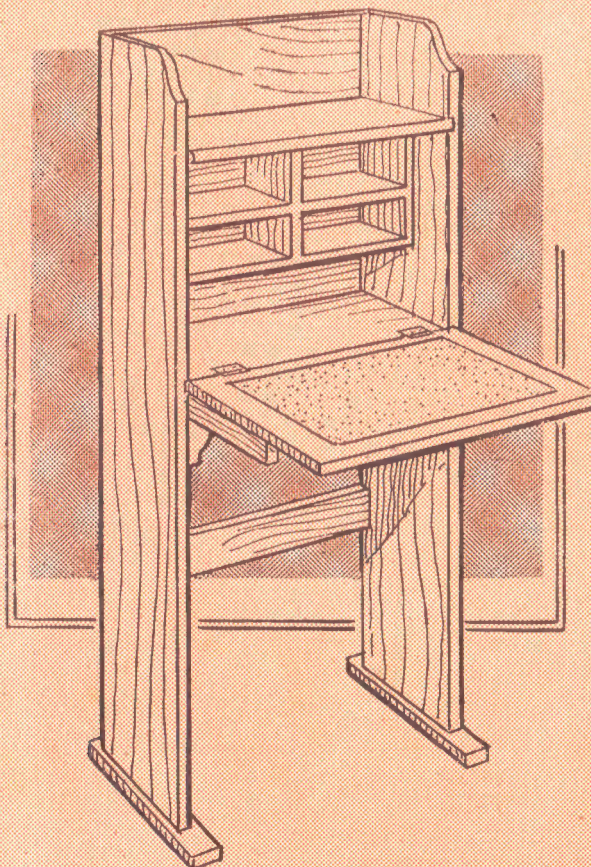
Price Fourpence

Vol. III No. 2870

**M**OST children like something of their very own, so the writing bureau, designed specially for a youngster, would prove a delightful present. It is just the thing for home-work and such correspondence as children are likely to indulge in. A shelf is added for the sole accommodation of children's books, also, and is not to be trespassed upon by any adult.

A too heavy article is not wanted, so a

## A CHILD'S SMALL BUREAU



good quality wood,  $\frac{1}{2}$ in. thickness, would be quite stout enough for the purpose. The depth of the bureau will allow the sides to be cut from a single board without jointing.

Fig. 1 shows a front and side section, less interior pigeon holes. Cut these sides to the measurements given, plus the thickness of the two shelves and bottom tenons. Shape up the tops, and square lines across where the shelves will come. At these places saw and chisel out grooves across  $\frac{1}{2}$ in. deep to accommodate them.

### The Feet

Cut the two feet from 1in. by  $1\frac{1}{2}$ in. wood. The bottom ends of the sides will be cut to form two tenons, as in detail (A) Fig. 2, each 2ins. long and separated 3ins. apart. Make the tenons

$\frac{1}{2}$ in. deep and chisel out the necessary mortises in the feet to fit them. Note here that the sides are fitted on to be 2ins. back from the front edge of the feet and, of course, 1in. in from the back. Glue the sides to the feet.

The two shelves are cut to the length given in the front view, plus  $\frac{1}{2}$ in. for entry into the grooves. The top shelf alone is  $\frac{1}{2}$ in. wider than the full depth of the bureau, so that its front edge will project that amount in front, so that the fall front on which the writing will be done, can come underneath it.

### The Drop Front

This fall front, seen in the side section at Fig. 1, is as long as the shelves and 12ins. wide. It is to be clamped at each side end to prevent warping, so when cutting the wood to length, make allowance for the clamps, which are 12in. lengths of 1in. wide wood, the same thickness, of course, as the fall front.

Detail (B) shows how these sides are cut to form tenons for fitting the clamps on, much the same construction as a drawing or pastry board, in fact. The tenons need not be deeper than  $\frac{1}{2}$ in. or even  $\frac{3}{8}$ in. and the wood should be reduced in thickness for them, a reduction of  $\frac{3}{8}$ in. at back and front will leave  $\frac{1}{2}$ in. thickness, just about right.

The two clamps are shown at (B1) and are, naturally, mortised to suit the tenons. Make a good fit, glue them on, and cramp up tightly until the glue is hard. No twisting or warping of the writing flap will then be likely to occur.



the little trouble involved being well worth it.

Level off the front and rear surfaces of the flap, then hinge it to the lower shelf, using  $1\frac{1}{2}$  in. backflap hinges, as in detail (C). Recess the hinges level with the surface. It may be added here that the flap should be cut the full length of the shelves, it will then overlap on to the sides of the bureau just  $\frac{1}{2}$  in. and keep the dust out. It comes up to the projecting portion of the top shelf, and if a small brass turn-button is fitted to the shelf, it will keep the flap up as well as any patent catch, and be a lot easier to fit.

Between the sides, above the top

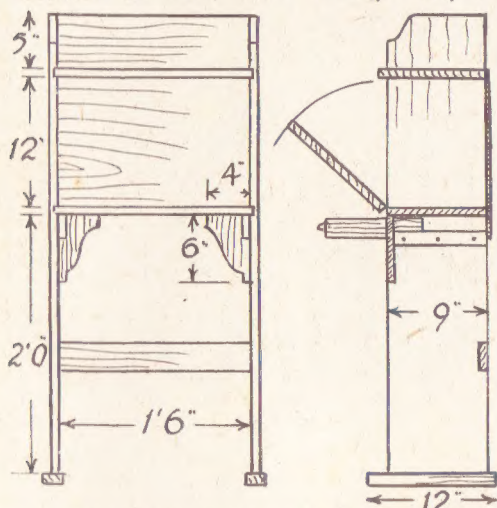


Fig. 1—Front and side view with dimensions

shelf, glue and nail a 5 in. wide strip of the wood across, to form a back for the book department. The actual back of the bureau is plywood, nailed to the shelf and side, and extending downwards 2 ins. below the lower shelf. Composition board might serve here. About halfway between this lower shelf and the feet, nail a crossbar of 3 in. wide wood across,

level with the rear edges of the sides. This is clearly shown in Fig. 1.

### Desk Supports

When the fall front is down, some support will obviously be needed. A pair of pull-out slides meet this. These are 9 in. lengths of 2 in. wide wood. Cut two angle brackets, as shown in the front view of the bureau, to the shape given, and in each cut a  $\frac{1}{2}$  in. by 2 in. piece from the outer corners.

Fix the brackets in with glue and nails, level with the front edges of the sides. Push the slides through these, and while they are in position, nail a 1 in. wide strip of wood underneath to keep them in place. These strips are, of course, nailed to the sides of the bureau.

Cut two strips 2 ins. wide, and preferably of thinner wood, also 9 ins. long, and nail these to the strips under the slides, allowing them to pro-

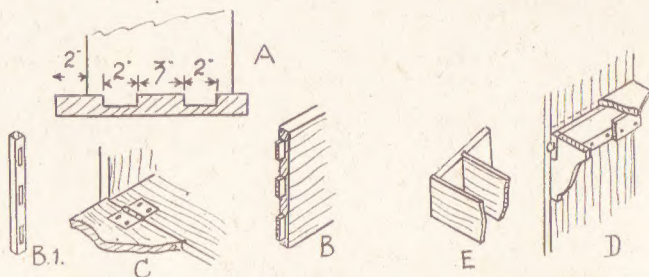


Fig. 2—Details of various joints, hinging, etc., in construction

ject above and so keep the slides from slipping outwards. The detail sketch (D) in Fig. 3 will explain this. The slides should now be withdrawable, but must not be pulled out too far, or else they will not support the writing flap. A wire nail driven in each flap just 1 in. from the rear ends, will act as a stop and prevent this happening.

### Inside Compartments

The interior of the bureau can now be fitted with pigeon holes, as in the general view, or alternatively with horizontal divisions, as at (E) like those

#### MATERIALS LIST

Sides (2)— $\frac{1}{2}$  in. by 9 ins. by 3 ft. 6 ins.  
Shelf (1)— $\frac{1}{2}$  in. by 9 ins. by 1 ft. 6 ins.  
Shelf (1)— $\frac{1}{2}$  in. by 9 ins. by 1 ft. 6 ins.  
Top back— $\frac{1}{2}$  in. by 5 ins. by 1 ft. 6 ins.  
Bottom bar— $\frac{1}{2}$  in. by 3 ins. by 1 ft. 6 ins.  
Feet (2)—1 in. by 1 in. by 1 ft. 6 ins.  
Fall front— $\frac{1}{2}$  in. by 12 ins. by 1 ft. 5 ins.  
Clamps for same (2)— $\frac{1}{2}$  in. by 1 in. by 1 ft.  
Slides (2)— $\frac{1}{2}$  in. by 2 ins. by 9 ins.  
Brackets (2)— $\frac{1}{2}$  in. by 4 ins. by 6 ins.  
Back (plywood)— $\frac{1}{2}$  in. by 16 ins. by 1 ft. 7 ins.

Remainder from spare wood.

in a stationery cabinet. Probably the pigeon holes would please a youngster better, more like the real thing.

To finish off the job, either stain and varnish the work or white enamel, as

## From The Editor's Notebook —

WHAT fun and games our readers do have! A letter from one of our ardent followers has been making some flea carriages for a flea circus, including a flea Lord Mayor's Coach. Well well! What next will they be up to—these craftsmen, I mean, of course—not the fleas.

THERE are literally thousands of text books on that complex subject wood, and the student, technician and even the ordinary man-in-the-street, who has as great an interest in wood as anyone, must, on occasion, have great difficulty in finding, amidst such a wealth of information, the particular work of reference he requires. It may be he is quite unaware that there is a particular book, covering his interest or problem, or, perhaps, he just wishes to obtain a particular work that is not on the booksellers' list.

As far as the Timber Development Association is concerned the problem is not so difficult for, during the past ten years, it has collected in its Headquarters Library about one thousand three hundred of the most useful books on the growth, structure, properties and uses of wood. To assist those who wish to know of or obtain a particular work the Association has recently issued an up-to-date catalogue in which all these books are listed



under subjects with author's name, title and publisher. Copies of this new edition of the 'Library Catalogue' can be obtained on application to the Timber Development Association, 75 Cannon Street, London, E.C.4.

HERE is another unusual 'collecting' hobby, which may appeal to other readers. A fellow in Belfast cuts out the Newspaper Title from the front page of as many different ones as he can get. After two years he has 342, and is still adding to them.

THE quaint cat you see in the picture is one which gaily revolves as you pull the bright attractive toy along. With Christmas coming you surely know somebody who would just love it. Patterns and instructions are on this week's gift sheet. A kit of wood and wheels to make it (No. 2870) can be bought from any Hobbies Branch for 5/-, or 5/10 post free from Dereham, Norfolk.

The Editor



# A novel playing model to make incorporates a CHURCH BELL SET

**W**E know that most of our readers prefer, whenever possible, to make and do things for themselves, rather than just watch the other fellow at it. But the ancient and interesting hobby of bell-ringing is one that, for most of us, ends with just listening—since the opportunity for doing more does not come our way. Making this little bell set, therefore, not only provides an interesting piece of work, but allows the study of bell-ringing (or campanology) to be carried on at leisure.

A peal of bells may, of course, consist of any number up to about twelve; but five, as shown in our model, is quite common. The number of different sequences (or changes) in which a small set of bells can be rung, is surprising. For instance, with five bells no less than 120 different changes are possible, and it is said that to ring a complete set of changes on twelve bells would take over 90 years, ringing two each second day and night continuously.

## Keyboard Operation

The bells shown are of the straight tubular type, since these are easier to get into tune than the older bell shape. They are operated by a keyboard or carillon—a method which is gradually taking the place of bell ropes, because of its obvious advantages. In allowing one man to operate a complete peal of bells.

For simplicity and economy of material the construction of the church itself has been kept quite simple; but handymen with a knowledge of architecture will, no doubt, wish to embellish it with further ornament. For the baseboard a piece of wood about 10ins. by 7ins. is required. The measurements for the rest of the work allow of wood of  $\frac{1}{2}$ in. thickness, although this can, of course, be varied to suit whatever oddments are available. The little porch, cut from four small pieces, can be of thinner material, to keep the proportion.

## The Side Walls

Make a start by cutting the two sides, the end, and the two pieces forming the roof (see Fig. 1). The tower consists of four pieces and a roof on which the steeple is fixed. The back piece of the tower is cut  $1\frac{1}{2}$ ins. shorter than the other three, to allow space for the key-

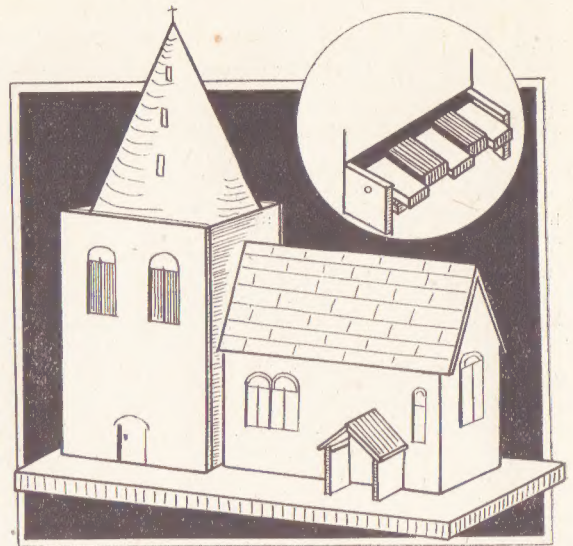
board, and neither the back piece or the tower roof should be fixed permanently until the 'works' have been put inside.

The steeple is cut from cardboard. Mark out a circle 4ins. in radius, and cut it out. Then cut it across the middle, and taking one of the halves fold it up coneshape until the width at the open end is just under 3ins. Glue the edges down in this position, and fix the cone to the roof of the tower with angle-shaped pieces of the cardboard or stiff paper. The steeple can be made up ready, but the actual fixing into position, of course, comes later.

## The Keyboard

The keys are  $\frac{1}{2}$ in. wide, and to enable the fingers of one hand to play them easier, alternate keys are made higher and a little shorter, piano fashion. Three of the keys are, therefore, cut 3ins. by  $\frac{1}{2}$ in. from  $\frac{1}{2}$ in. wood, and two of them  $2\frac{1}{2}$ ins. by  $\frac{1}{2}$ in. from  $\frac{1}{2}$ in. wood. Take off the front edges slightly, to give a finished appearance, and the second and fourth can be painted a darker colour than the first, third and fifth, to complete the effect.

When the keys are ready, hold them in a vice or clamp side by side, with the bottom edges flush, and drill a  $\frac{1}{8}$ in. hole through all five, about 1in. from one end. The five keys (with washers between) are then threaded on to a stiff wire or piece of  $\frac{1}{8}$ in. dowel, which is held in the two pieces of 1in. square wood that are glued to the base of the tower, as shown.



## The Strikers

The general principle of the strikers and their shape, is shown in the sketch at Fig. 2. Here only one is shown, but the other four are, of course, identical, and are mounted side by side on a dowel. The actual size of the strikers will vary according to the length of the bells, so it is best to cut and tune the bells first before attempting to get the strikers into position.

They must fit very loosely on the  $\frac{1}{4}$ in. dowel, with small pins through the dowel on either side of each of them to prevent any sideways movement. When we come to fix them this dowel fits into two holes cut for it in the sides of the tower. It is important to see that the hole in each striker is higher than the middle, so when the key is released the striker falls back away from the bell. Put a small screw or tack in each striker at the point it will touch the bell, as this helps to produce a louder, clearer note.

As the second and fourth keys are  $\frac{1}{2}$ in. thick, the strikers for these two will need to be a little shorter at the bottom than the other three. A block of wood  $\frac{1}{2}$ in. thick is glued to the base, immediately under the inner edge of the keys, on which they rest when not being struck, and a similar block about  $\frac{1}{4}$ in. thick is glued under the outer end, as a stop when the keys are depressed.

## The Bells

Now we come to the

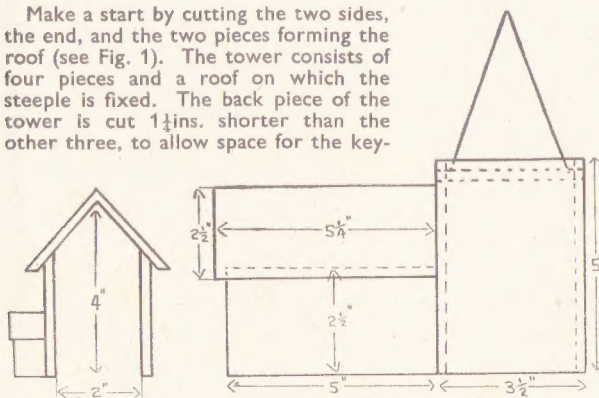


Fig. 1—End and side view, with dimension of parts

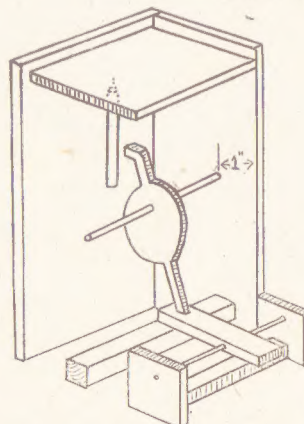


Fig. 2—How the strikers act



bells, and here there is scope for a good deal of variation according to what the handyman has available. Tubular steel about  $\frac{3}{4}$  in. diameter is the best, but solid metal will do. The main thing is to see that it is as hard as possible, to get a good clear note when it is struck.

The bells can range in size from about 3 ins. to 1  $\frac{1}{2}$  ins., and if all five are to be cut from the same material a beginning can be made by cutting off pieces 1  $\frac{1}{2}$  ins., 1  $\frac{1}{2}$  ins., 2 ins., 2  $\frac{1}{2}$  ins. and 3 ins. Drill a hole near the top of each, and suspend them separately on wires, for a trial, giving each a tap with a piece of metal to see the note it produces. The pitch of any of them can then be raised by sawing a small piece from the end.

### Tuning

The usual intervals for a set of five are (in tonic sol-fa—from the top), doh, te, la, soh, fah. That is to say the top note is made the dominant (or doh note) and the second is only half of a full note lower, to make the te.

There is, of course, no need to use exactly the same material for all the bells, and by using a different metal for the top or bottom two it is possible to produce five suitable notes with pieces more nearly the same length. This has the advantage that the strikers need not

be made to reach so high as when the top notes are shorter.

When five suitable bells have been cut and tuned, they are hung on separate stiff wires from the roof of the tower, about  $\frac{1}{2}$  in. from the front edge, as shown.

CUTTING LIST		
No. of Pieces	Description	Size
1	Base Board	10" × 7"
2	Sides	5" × 2 $\frac{3}{4}$ "
1	End	2" × 4"
2	Roof	5 $\frac{1}{2}$ " × 2 $\frac{1}{2}$ "
1	Tower Front	5" × 3 $\frac{1}{2}$ "
1	Tower Back	3 $\frac{3}{4}$ " × 3 $\frac{1}{2}$ "
2	Tower Sides	5" × 3"
1	Tower Roof	3" × 3"
2	Porch Sides	1" × 3"
2	Porch Roof	7" × 1 $\frac{1}{2}$ "
3	Keys	3 $\frac{1}{2}$ " × 1 $\frac{1}{2}$ " × $\frac{1}{8}$ "
2	Keys	2 $\frac{1}{2}$ " × $\frac{1}{8}$ " × $\frac{1}{8}$ "
2	Keyboard Supports	1" × 1"
1	Inner Key Block	3" × 1" × $\frac{1}{8}$ "
1	Outer Key Block	3" × 1" × $\frac{1}{8}$ "
5	Strikers from	3" × 1 $\frac{1}{2}$ "
1	Key Dowel	3 $\frac{1}{2}$ " × $\frac{1}{8}$ "
1	Striker Dowel	3 $\frac{1}{2}$ " × $\frac{1}{8}$ "

The exact position for the strikers will then be seen. They must be long enough to reach all the bells, and for the bottom of each striker to rest lightly on its own key.

When the key is depressed the striker

moves forward and strikes the bell, falling back into its first position as soon as the key is released. See that the strikers hit each bell in the middle of it, so it is not driven sideways. But if this does happen little guides of cardboard can be glued to the inside of the tower in suitable positions to prevent the bells from touching each other. It may also be necessary to put a strand of cotton across inside the tower, between the bells and the front of the tower, to prevent the bells from hitting the front and setting up an unwanted jangle.

### Adjustment and Touch

With just a little extra trouble the back of the tower can be fitted on a pair of hinges, and then the little door so made can be opened at any time to make little adjustments to the bells.

With a little practise the right 'touch' on the keyboard is soon acquired. The loudest and clearest notes are obtained if the keys are pressed down with a short tapping motion, then released quickly and a brief interval of a second or so allowed before striking the next one.

Paint in the windows neatly, and any other suitable decoration. Then finish off the stone walls and the slated roof and spire in their appropriate colours. (290)

## Some practical, helpful and interesting HINTS FOR ANGLERS

**R**EMEMBER that light tackle is all the better for comfort in fishing; avoid heavy rods. With a light rod you can fish all day without fatigue. If you can only afford one rod be sure it is light-weight and well-balanced.

When fishing it is wise to carry a disgorging, one that is really useful. It should have a hole at one end which is threaded with a piece of string, in turn tied to a button hole of your jacket, and the disgorging kept in your pocket. When you need to use it, you just pull it out of your pocket with the string, and after use it is as easily slipped back. You need not fear losing the disgorging when secured in this fashion.

### Put them Back

Returning live fish to the water after you have caught them is much practised these days. It is a wise thing to get a keep-net and sink it into the water at the edge of river or lake, secured by string and peg to the bank. Into it slip the fish when unhooked.

At the end of the day return them to the water, unless there are any you specially wish to take home. All small fish should be put back. In this way the stock of fish in the water will not deteriorate, and future sport is ensured. Do not throw the fish back; replace them gently.

Sometimes the success of a day's outing consists of trying different methods and dodges. For instance, supposing one way

of angling is unsuccessful, another method may be tried. Sometimes fish are cruising in mid-water, instead of on the bottom, or they may even be just under the surface. Therefore it is advisable to vary the depth at which you have adjusted float and baited hook. If there is nothing doing at one depth, there may be at another.

### Change of Bait

It is a good plan, too, when fish do not bite freely, to change your bait. Sometimes an unusual bait is attractive. Bacon rind, small cubes of tripe or fat bacon—if you can spare it out of your meagre ration—and cheese, for instance, are often good baits for chub and perch, etc. Bits of Yorkshire pudding are also attractive at times. Indeed, you can try almost anything edible, and find it acceptable to fish.

To preserve a keep-net, and give it a longer life, steep it in boiled linseed oil. All surplus oil must be drained away, and the net hung up until dry. All gut casts, lines and attachments should be kept in airtight tins or in a book with chamois leather leaves.

When a river is flooded worms are best baits. Under flood conditions fish are often to be found in the slacks, quiet bays, 'cow' drinks, ditch mouths, slow eddies, and grassy hollows.

### Rod Tips

When a rod ferrule sticks it can be annoying. To prevent this happening, it

is wise to grease, with some kind of lubricant or Vaseline, the ferrules before joining the rod when about to fish.

A rubber band placed on the rod below the bottom ring is useful to secure the hook while moving from place to place, with your rod set up. Another idea is to whip a small ring on the rod just above the cork grip. You need a suitable ring and a piece of flat metal (thin) bent in centre to fit against the rod, and a little silk to whip it on securely. When moving you insert hook in the ring.

### Rod Stoppers

Keep stoppers or plugs in the ends of rod ferrules when the rod is not in use. Have an eye to the rings periodically. Some of them may get worn and become sharp on the edges, and when this happens the line suffers. Renew worn rings as soon as noticed.

At end of season re-varnish the rod and see to all frayed whippings—replace them, and give them a coat of shellac varnish.

A useful shellac varnish is made up as follows: shellac, six parts; spirits of wine, eight parts; gum benzoin, two parts. Keep in a dry place. This is a quick-drying varnish, and can be used for all kinds of silk whippings and bindings.

Always carry your rod in a bag, and when not in use hang it up by the loop at the end of the bag. If no loop on the bag, stitch one on—a piece of tape will serve. Such care as this will add life to the whole thing.



# Artistic Christmas or Greeting Cards can be made with LINO-CUT WORK

LINO cutting is sometimes referred to disparagingly as something we did at school, but prints from lino cuts, in capable hands, are works of art, and a medium of expression used by professional artists. It is a form of printing and one good purpose in which lino cuts can be used, is in the production of Birthday or Christmas cards. Once the preliminary work is finished, any reasonable number of copies may be taken.

The linoleum is easy to cut out, but its comparative softness necessitates a broad, simple technique. The tools required are few, a sharp knife and a gouge or two, obtainable, as is also the linoleum, at art shops.

The process is to cut out of a piece of linoleum, the whites of a black and white

by the spaces, and are easily made with a V gouge.

The first consideration is the design of the Christmas card. Some subjects lend themselves to lino cutting better than others. If figures are attempted they must be suggestions, rather than detailed drawings. Faces are difficult unless on a very large scale, and the size of your card will probably curtail this.

## Suitable Subjects

Some architectural subjects are excellent for this work—a sketch of a half-timbered Tudor cottage would need little adaptation. Harbour scenes are good and fascinating, the water can be treated boldly, with masses of black and white shadows and reflections.

To some, sketching comes naturally,

detail. Ink the blacks in solidly with indian ink. This will give an idea of how the final print will look. A tracing is then made of all the black lines and masses. The tracing is reversed, the transparent tracing paper being merely turned over, and the reversed outlines traced on to the linoleum. It is advisable now to ink in the sketch on the actual linoleum for clearness when cutting.

A complete lino cut could be cut out with a sharp-pointed knife, but it is a laborious process, and a few simple tools are worth the outlay. The cutting tools need little practice to find their uses. Broadly, the knife is used for cutting round the outlines.

The V gouge will cut out spaces beginning with sharp points and if not dug too deeply it can be used to produce

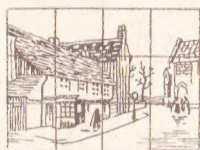


Fig. 1—The subject squared up

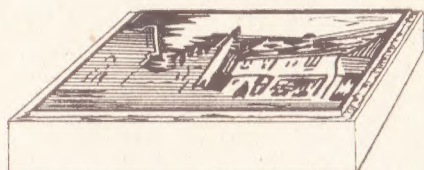


Fig. 4—A partly-cut subject mounted on wood

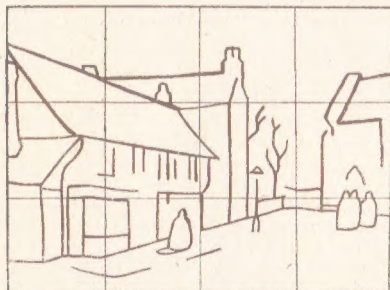


Fig. 2—Drawn double size for cutting



Fig. 3—Broad lines and masses drawn in

sketch or design, leaving the blacks standing up in relief. These parts in relief will then print when inked and paper brought into contact under pressure.

From this it will be found that thin black lines, i.e. the thin strips of linoleum left in relief, are not advisable as they break easily, either in the cutting or in the printing. Thin white lines fairly wide apart are possible, for these are formed



Fig. 9—The V gouge



Fig. 11—The U gouge



Fig. 12—U gouge cutting at different depths



Fig. 5—The cutting knife



Fig. 10—Progress of cutting—getting deeper each time

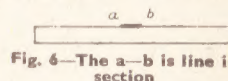


Fig. 6—The a-b is line in section

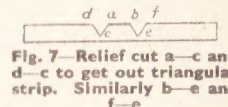


Fig. 7—Relief cut a-c and d-c to get out triangular strip. Similarly b-e and f-e

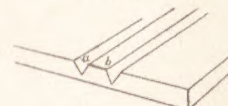


Fig. 8—Result of cut, with a-b in relief

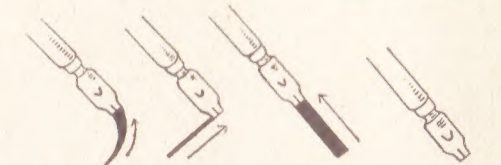


Fig. 13 & 14—The type of pen with strokes it can produce

## Best Wishes

Fig. 16—Quick printing with flat nib

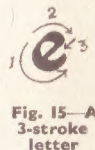


Fig. 15—A 3-stroke letter

but if not most people have taken snapshots on holiday, some of which make excellent pictures, and can be used as a basis for the lino cut. Having drawn the sketch, or selected the photograph desired, this must be adapted to a suitable form for cutting in linoleum.

If it is not the correct size, an outline sketch can be made by squaring up. This consists of dividing the original sketch or photograph into squares. On a separate sheet the same number of squares are drawn, either larger or smaller, in such a proportion as to give the required size.

The main shapes are then drawn in using the lines of the enlarged or reduced squares as a guide. Then must be decided the main lights and darks, cutting out all

fine white lines to relieve solid masses of black. The U gouge will cut out spaces with curved ends. The V and U gouges are also used for cutting out the large spaces. In this case the lino must be gouged out as deeply as possible without digging into the canvas backing of the linoleum.

## Mount on Wood

When the cutting is completed, the linoleum should be mounted on to a wood block. It can be nailed on with small pins. This will give a solid foundation for printing. The next stage is inking up the block. This can be done with printing ink, oil paint or poster paint. The last named is perhaps the best for a start.



Poster paints are supplied in glass jars and should be of a creamy consistency. The paint can be applied to the block by dabbing with a wad of cloth, by a brush or with a rubber roller. When using the dabber try it out on a hard flat surface.



An example of broad treatment of flowing lines to suggest a dog's coat

The paint must go on evenly, if too liquid it will run into and fill the crevices and the thin white lines will not print clearly.

Various types of paper can be used, as different effects are given by different surfaces. Some papers give better results if used damp—soak in water and dry off the superfluous liquid by placing between two sheets of blotting paper. The block having been coated with ink or paint, the paper is laid on the block and pressure applied by using a roller or photographic

squeegee, the side of the hand or the back of a large spoon.

The first result will probably show a number of lines and blobs which are not required, especially where large white spaces occur. With the first print as a guide, these blemishes can be removed by further cutting. If the lino cut is printed on the bottom right-hand quarter of the sheet of paper, the paper can be folded to form a ready-made card, or if preferred the lino cuts can be trimmed and mounted on to a stiffer paper or card.

### Greetings

The cards are now complete except for the greetings. The cards can be used as they are and the good wishes written inside, but some will prefer to finish them off with a little neat printing. Paper specially printed can be obtained beforehand but this considerably increases the cost of the cards, and unless it is intended to print a large number of cards, this additional cost will not be warranted.

The printing can be done by hand. It is as well to keep the wording short. Good printing cannot be hurried. Useful for quick printing is a flat nib such as used for showcard work. With these, thick and thin lines are obtained according to

the direction in which the pen stroke is made. Draw faint pencil guide lines and do not overload the nib with ink. Too much ink will cause blots in certain letters. The small 'e' particularly is inclined to fill up solidly. The penholder is held in the same position when forming the letters.



Architectural treatment with a decorative sky effect. The V gouge cut thin lines of the roofing

A successful lino cut in the form of a Christmas card may tempt you to obtain orders from your friends. Clubs and bazaars find them useful for their stationery stalls at the Christmas fêtes. An order for a dozen or two will cover the cost of production and anything above will be mainly profit for the Christmas holiday. (216)

### Sock Drier

YOU all know how some socks shrink out of shape after they have been washed. This gadget prevents all that. It is simply a piece of waterproof-glued plywood cut to shape, and slipped inside the wet sock. The internal holes are not essential, but they are recommended, as they facilitate drying.

To get the shape of the plywood, lay a brand new sock over it, and mark round with a pencil. This first shape can be used as a template for the rest. An extra-long shape may be made for use with golf stockings, etc. At the top, a hole is drilled to take a loop of string so that the affair can be hung up.

The shape is cut with a fretsaw, of course. If you have a treadle machine, two or three can be cut at a time by tacking pieces of plywood together. Glasspaper well afterwards so the edges are well rounded and not likely to tear the socks.



### Staining Floors

IN many homes it is the custom to stain the surrounds of floors, but all too often a cheap grade of varnish stain is used and, moreover, applied to wood not in a condition to receive it. Consequently disappointment results. It is a fallacy to believe that varnish stains will hide blemishes. All too often they reveal them.

The floor-boards, after being well scrubbed in the usual way, must have their grain closed with a good wood filler.

Such fillers can be obtained ready-made, but one can make some at home by mixing a good grade of silica with equal parts of linseed oil, turps, and japan drier, to make a paste which can be well brushed in across the grain of the wood with a stiff brush and left to dry for a couple of hours. The surplus is then removed by rubbing first across the grain, and lastly with the grain, with a piece of canvas. The wood is then glasspapered smooth.

Buy a good make of varnish-stain; it is far cheaper in the long run. Two coats are better than one, especially when the first is allowed to get bone-dry and lightly glasspapered before the next is applied. If the varnish is subsequently treated with wax polish the floor will be easier to keep shiny.

Never apply varnish stain over badly-worn painted or varnished floor-boards, hoping that the new coat will hide the

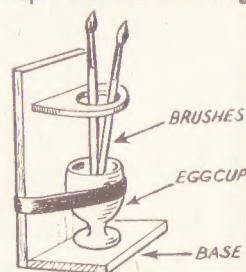
old. Remove the old varnish. This is best done with a varnish-remover solution which can be obtained from a paint shop.

The liquid softens the varnish which can then be scraped off. The parts which miss the scraper can be scrubbed with steel wool dipped in the varnish remover. This done, scrub down with a sugar-soap solution.

By this time the wood will be rather rough and open-grained, so it is then glasspapered and grain-filler is applied as before. It might be thought that this is a lot of work, but it is quicker in the end, because a properly stained floor surround will last a long time, whilst a 'rushed' job soon looks tawdry, and has to be done all over again.

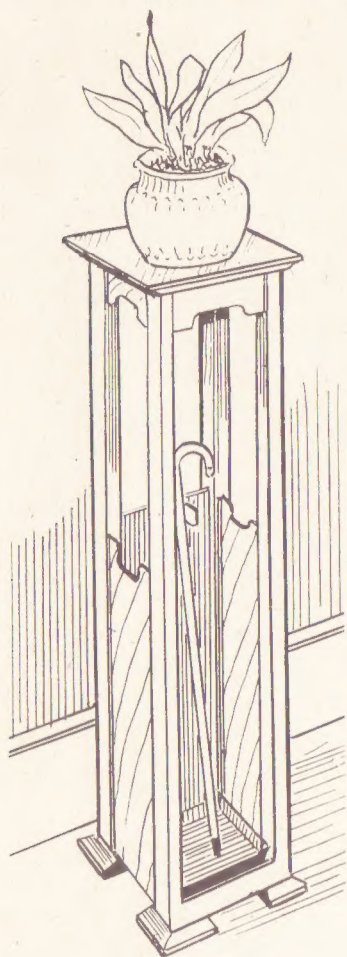
### Paintbrush Holder

A HANDY holder for paint brushes which can be placed on the bench or fastened on the wall, can be made from a bracket at the top of which a small ring of fretwood is fastened horizontally. An egg-cup can be fastened at the bottom of the bracket by adhesive tape, and should be filled with turpentine.





# A useful, simple and attractive piece of work is this UMBRELLA FERN STAND



Glue and nail these to the top and bottom parts, as shown at (B). It will be seen that the uprights extend beyond parts (A) by  $\frac{3}{4}$  in. at each corner. At the bottom, on the side which will be the open one, glue and nail across a strip of wood,  $\frac{3}{4}$  in. thick and  $1\frac{1}{2}$  ins. wide, as shown at (B).

When the glue is set hard, punch the nails down and stop the holes level, then level off both top and bottom with a smoothing plane to provide a flat surface for the actual top of the stand and the four feet underneath.

The sides and back of the carcase are to be panelled. Fig. 2 gives the dimensions of these, also of the top spandrels. Of these parts cut two of (C and D) and four of strips (E), lengths of  $\frac{1}{2}$  in. square wood. The panels and spandrels are best cut from  $\frac{1}{4}$  in. plywood, though a good quality of substitute plywood could be used instead. The strips (E) are nailed and glued to the uprights, as shown in plan detail (F) in Fig. 3.

Then the panels, etc., are nailed to the side edges of parts (A) and to the strips of wood (E). Two of (D) and one of (C) are now cut, only 7 ins. wide, to fit in the back and across the top at the front of the stand, fitting all in with strips of wood (E) as before.

The top of the stand is cut  $10\frac{1}{2}$  ins. by  $10\frac{1}{2}$  ins. from one piece of wood if possible, of  $\frac{3}{4}$  in. thickness preferably. It is bevelled off underneath, as in detail (G) and fixed to the top of the carcase with screws, from beneath. From similar wood, four corner feet are cut to size given at (H). These are bevelled on their upper surfaces, two edges only, and are screwed to the bottom, to extend beyond the uprights by just 1 in.

This completes the woodwork of the stand. Nails should be driven flat in,

then the whole glasspapered to smoothness, paying particular attention to the edges of the plywood panels. The whole can be stained and varnished or enamelled, according to the wood employed.

If deal has to be used, an enamel finish is to be preferred, or a coat of hard glossy paint over a suitable undercoat. For an article of this description, a warm brown tone of colour would be rather nice.

To the back panel, inside, it is as well to fix a small divisional piece of wood or metal, to keep walking sticks or um-

## MATERIAL NEEDED

Parts A (2)— $\frac{3}{4}$  in. by 8 ins. by 8 ins.  
Uprights (4)— $\frac{3}{4}$  in. by  $1\frac{1}{2}$  ins. by 3 ft. 3 ins.  
Top— $\frac{3}{4}$  in. by  $10\frac{1}{2}$  ins. by  $10\frac{1}{2}$  ins.  
Feet (4)— $\frac{3}{4}$  in. by 3 ins. by 3 ins.  
Panels (C and D) (2)— $\frac{1}{4}$  in. by 6 ins. by 2 ft.  
Panels (C and D) (1)— $\frac{1}{4}$  in. by 7 ins. by 2 ins.  
Front spandrel, D, side strips, etc., from scrap wood left over. Panels C and D are shown as one, to be sawn across as in the diagram to make the two.

rella apart. Readers can, of course, employ their own ideas about this simple matter. As a suggestion, a 10 in. length of strip brass, with its ends doubled together and bent at right angles, screwed to the back would do nicely and look rather well.

Inside the stand, at the bottom, a metal tray to receive any moisture draining from an umbrella, would be a useful accessory. This can be easily made from sheet zinc or tinplate. A pattern for it is shown at (I). Bend up 1 in. all round, press the corners together, as at detail (J) and flatten them down. This saves the trouble of soldering them and is quite as effective. Enamel the tray green colour or coat with japan black, as preferred.

**T**HIS combined piece of hall furniture serves two purposes, that of a plant stand, with an interior space to accommodate an umbrella and a couple of walking sticks.

Fig. 1 shows the method of building it, the carcase being four upright strips of wood, joined together at top and bottom with the two pieces of timber, shown at (A). These parts are cut to the dimensions given from  $\frac{3}{4}$  in. thick wood. At each corner cut out a piece 1 in. long and  $\frac{3}{4}$  in. wide. The four uprights are of  $1\frac{1}{2}$  in. by  $\frac{3}{4}$  in. section, and can well be sawn from a piece of the  $\frac{3}{4}$  in. thick board from which parts (A) have been cut.

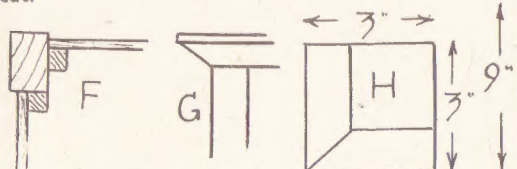


Fig. 3—The joints to use

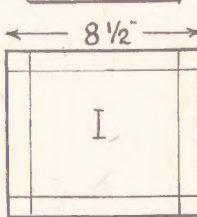
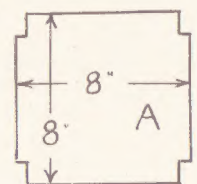


Fig. 1—The carcase of the framework

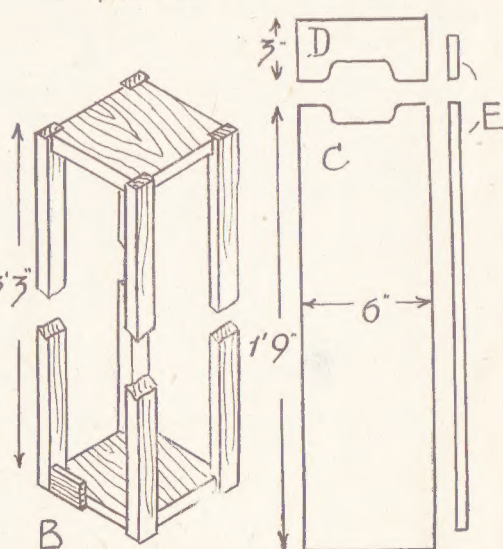


Fig. 2—The side panels



# Simple details and dimensions for building A MODEL WINDMILL

THE base is cut out of a piece  $\frac{1}{2}$  in. thick and  $3\frac{1}{2}$  in. square. A line is now drawn from corner to corner to find the centre, also the position of the feet of the braces. Bore a  $\frac{1}{2}$  in. hole right through the centre of the base to take a piece of dowel rod, which acts as the main post of the mill. A small chamfer should be worked all round on the top edge about  $\frac{1}{8}$  in. each way.

A piece of  $\frac{1}{2}$  in. dowel rod should next be cut off at  $2\frac{1}{2}$  ins. long and glued in the hole in the base. Then measure  $1\frac{1}{2}$  ins. back from the centre post and make a mark for the bottom outside point of the braces, which come on the diagonal line marked from corner to corner.

The body of the mill should now be prepared from a piece of wood  $3\frac{1}{2}$  ins. long, by 2 ins. by  $1\frac{1}{2}$  ins. This can be built up if necessary from two or three thinner pieces glued together. Cut one end square and making a mark at  $\frac{7}{8}$  in. from the front end and in the centre of the width, which is the  $1\frac{1}{2}$  ins. way. This is therefore  $\frac{7}{8}$  in. in from the side and  $\frac{7}{8}$  in. from the front. Bore another  $\frac{1}{2}$  in. hole at this point about  $1\frac{1}{2}$  in. deep.

The front should then be shaped as

shown. Measure  $\frac{1}{4}$  in. on each side and bevel back from the centre line so the front is splayed back each way from the centre line. Then measure 1 in. down from the top and square a line round. From this line draw the shaping of the top as shown in the drawing.

When finally shaped the body can be pushed down on to the dowel which is standing up from the base, leaving a space of  $1\frac{1}{2}$  ins. between the base and the underneath of the body. The dowel should, of course, be lightly glued before assembling. Also make sure that the base and body are square and in line with each other before the glue sets.

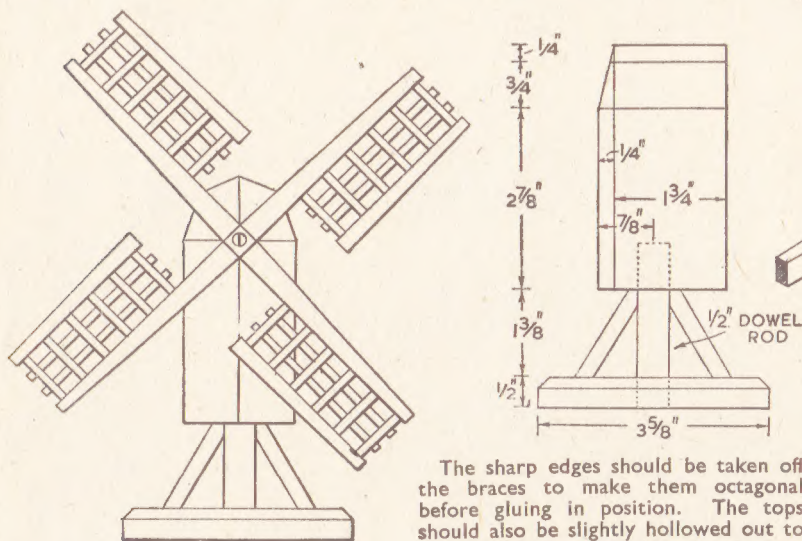
The braces are cut from pieces  $\frac{1}{2}$  in. square. An easy way to mark the top and bottom cuts on these is to get a piece of thin cardboard with a square corner on it (a postcard would do) and measure  $1\frac{1}{2}$  ins. from the corner on one edge and  $1\frac{1}{2}$  ins. from the same corner on the other edge. These two marks are held on the brace and a mark made where each side of the card comes. This will give the correct bevels for the top and bottom cuts.

as shown. A hole is drilled to take a small screw for fixing to the body of the mill. Before gluing the halved joint together set out the six holes at  $\frac{1}{2}$  in. centres on alternate sides of the main spars to take the small cross rails. Drill these nearly through with a  $\frac{1}{8}$  in. drill.

The spars are then tapered off from the centre to  $\frac{3}{8}$  in. at each end, the halving glued and the two spars fixed together like a cross. The short spars should be marked out for position of holes from the main spars, and can be worked in one long piece for easy setting out and boring.

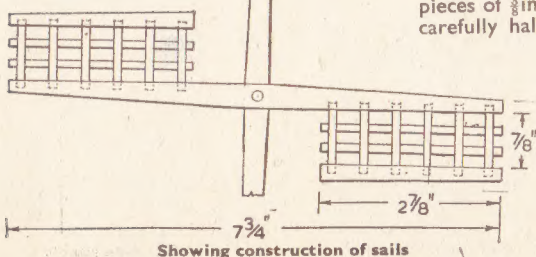
They are made from a piece of  $\frac{3}{8}$  in. by  $\frac{1}{2}$  in. If a centre line is marked from end to end of a piece about 12 ins. long, and a pair of dividers set to  $\frac{1}{2}$  in., this can be marked right along for 24 holes. Bore with a  $\frac{1}{8}$  in. hole and cut afterwards into four pieces  $2\frac{1}{2}$  ins. long and slightly tapered smaller on the ends.

The small rails are cut from  $\frac{1}{8}$  in. square stuff; twenty-four of these will be needed at  $1\frac{1}{2}$  ins. long. The ends are rounded with a penknife to push into the holes in the spars.

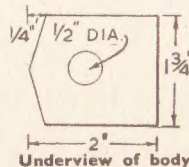


The sharp edges should be taken off the braces to make them octagonal before gluing in position. The tops should also be slightly hollowed out to make a nice fit on the dowel rod. This can now be left for the glue to set while the sails are prepared.

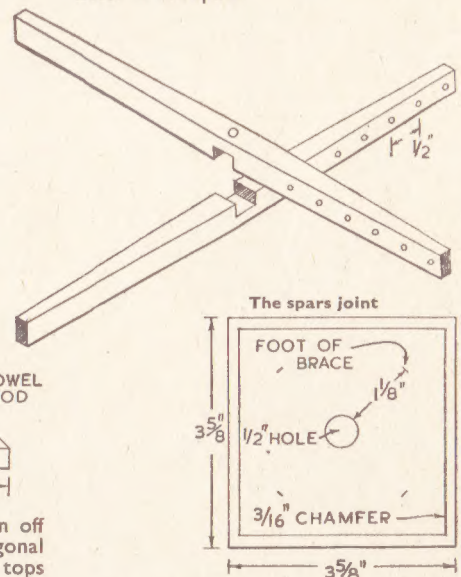
These sails are made by cutting off two pieces of  $\frac{3}{8}$  in. square stuff at  $7\frac{3}{4}$  ins. long, carefully halved together in the centre



Showing construction of sails



Underside of body



The spars joint

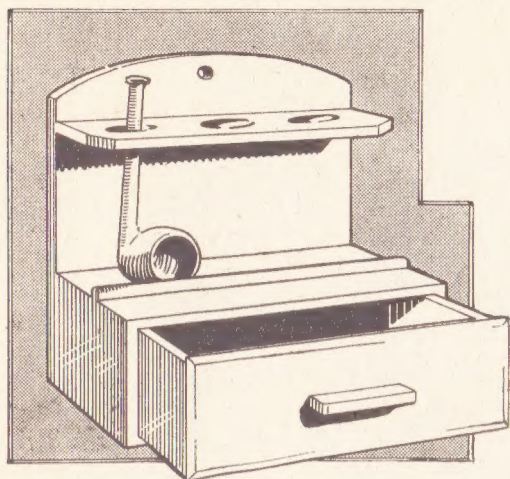
The whole sail can now be assembled together before gluing, to see if everything fits together nicely. Then a spot of glue should be put on each end of the small rails and the whole thing can be lightly tapped together and left for the glue to set.

The back cross rails are cut from  $\frac{1}{8}$  in. square stuff at  $2\frac{1}{2}$  ins. long and glued on the back of the short rails by putting a spot of glue where they cross the short rails. When finally glued and set the sails are fixed to the body with a small screw through the centre. The whole thing would look well made in oak and brushed over with linseed oil when finished.

(266)



# This simple drawer and pipe holder makes an ideal SMOKER'S COMPANION



On the outline of the back, shown in Fig. 1, the positions of the base and the top of the box shown as (B), and the pipe rack or shelf (E) is given by dotted lines. These dotted lines should be drawn across the back as a guide and two holes should be bored between each pair of lines to take the fixing screws. After the holes are made, they should be countersunk on the back of piece (A) so the heads of the screws lie flush and neat.

It will be noted that the top of piece (A) is cut to a curve, the point for the compass which marks this curve being made as shown

at the base of the piece. The parts (B) and (C) are cut in pairs, so having marked out and cut one piece, it can be used as a template for drawing round to outline the second piece. This assures accuracy of fit when the time comes for assembling the pieces. Note when gluing up that the parts all lie flush at the ends of the drawer compartment, this is seen in Fig. 1, and in the sketch of the finished article. This again simplifies the final cleaning on a flat surface of glasspaper.

## Pipe Holder

The rounded-top fillet (D) which is glued and pinned down to the top of the box is placed  $2\frac{1}{2}$  ins. out from the main back to the front edge, thus allowing the pipes to rest, as shown in the side view Fig. 2, without falling forward.

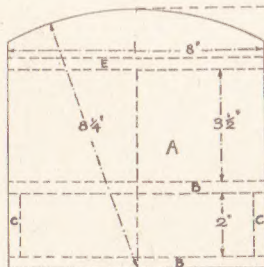


Fig. 1—Details of main back

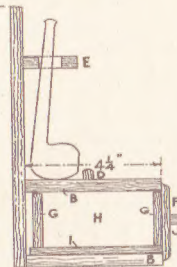


Fig. 2—Side elevation

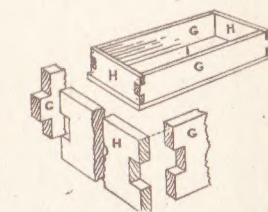


Fig. 4—Drawer construction

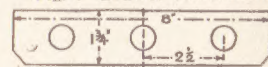


Fig. 3—The pipe rack

(H) into three and allow the thickness of the wood—viz.,  $\frac{1}{4}$  in. as width of each tenon and its recess. Cut the joints clean with the fretsaw and afterwards glue them up, testing the inside of the frame thus made with the set square to

## CUTTING LIST

- A—8 ins. by 8 ins. by  $\frac{1}{4}$  in.
- B—8 ins. by  $4\frac{1}{2}$  ins. by  $\frac{1}{4}$  in. Cut 2.
- C—4 ins. by 2 ins. by  $\frac{1}{4}$  in. Cut 2.
- D—8 ins. by  $\frac{1}{4}$  in. by  $\frac{1}{4}$  in.
- E—8 ins. by  $1\frac{1}{2}$  ins. by  $\frac{1}{4}$  in.
- F—7 ins. by 2 ins. by  $\frac{1}{4}$  in.
- G—7 ins. by  $1\frac{1}{2}$  ins. by  $\frac{1}{4}$  in. Cut 2.
- H—4 ins. by  $1\frac{1}{2}$  ins. by  $\frac{1}{4}$  in. Cut 2.
- I—7 ins. by 4 ins. by  $\frac{1}{4}$  in.
- J—2 ins. by  $\frac{1}{4}$  in. by  $\frac{1}{4}$  in.

ensure its being perfectly square. A few fine fret pins can be driven in the joints after the glue has hardened, as seen in the outline of the made-up drawer.

## Drawer Details

The floor of the drawer (I) it must be noted, lies flush with the front face of the piece at the front of the frame, see section of drawer in Fig. 2. The back upright (G) of the drawer frame will come just a little way in, along the floor, so as to give added strength when the nails are driven through the floor into it.

The front of the drawer, piece (F), is  $\frac{1}{8}$  in. larger than the drawer itself all round, as will be seen in the section Fig. 2. The back edge, therefore, of piece (F) will lie flush with the front of the box when the drawer has been closed.

A simple square handle is glued and

HERE is an ideal piece of work for the fretwork beginner. This is a simple pipe rack with drawer beneath for cigarettes. It is just the thing for the side table, or it could, of course, be hung on the wall quite handy. The marking out of the various parts must be carefully and accurately done if a true fit is to be made, and in this respect a drawing board with the square and set squares are almost indispensable.

In Fig. 1 the ground arrangement of the parts are seen, and some measurements, helpful in assembling. A full cutting list is included, so there may be no difficulty in setting out the parts.

## The Main Back

This is part (A) and should first be marked out and cut. As fairly thick wood is suggested for the main parts of the rack, care must be taken in cutting with the fretsaw to keep a perfectly vertical cut, otherwise the pieces will not fit accurately and closely.

If a fretmachine is available, then there need be no worry about this vertical cutting: If it is required to clean up the cut edges, care again must be taken to hold the piece perfectly vertical on the glasspaper surface. All sharp edges should be just slightly glasspapered.

## Prevents Splitting

READERS who do large work, and use nails can lessen the risk of splitting when nailing near the edge, if they turn the nail upside down, and make a slight mark with its head by giving it a couple of blows with a hammer where you intend to drive it. You will find this lessens splitting considerably.

The outline of the pipe rack shelf (E) is given in detail in Fig. 3. The holes for the pipes should be  $\frac{1}{4}$  in. diameter and should preferably be made with the brace and bit, although holes cut with the fretsaw can be quite cleanly cut if sufficient care be taken. Glue and screw the rack on and then proceed to make the drawer.

The method of making this is shown in the outline diagram at the top of Fig. 4. The jointing of the sides and ends of the drawer is given in the enlarged diagram in Fig. 4. To mark the jointing correctly divide the width of the pieces (G) and

nailed to the front (F) before this is glued and pinned to the drawer piece (G). All the  $\frac{1}{4}$  in. wood may consist of American white wood or similar even-grained stuff, while the  $\frac{1}{8}$  in. wood could be mahogany or any such hard wood.

The actual external finish of the rack may be left to the choice of the worker; it may be painted in art shades or stain and varnish. The surface of the wood must be well cleaned with coarse and fine glasspaper before any finish of either paint or polish is applied.



# A simple mechanical frame will introduce movement and NOVELTY FOR 'THE FIFTH'

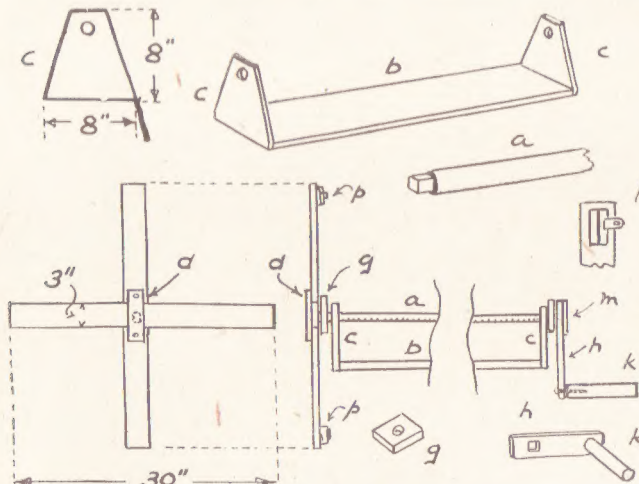
**H**AVE you ever been to a firework display and seen moving 'set-pieces'? The set-pieces are those big frames of fireworks that are generally at the end of the programme and which, with the fireworks burning all together, outline some figure. Most of these pieces are stationary, but occasionally, when once alight, the frame revolves or goes through some other motion.

Recently the writer saw a huge firework duck of this nature which when all aglow pecked the ground in front of it. When one has seen a few moving pieces the stationary type seem just a little flat, so the action must add something to the quality of the exhibition.

Now there is no reason why you should not put a bit of movement into your own home display this year. It is really quite simple to do.

## A Simple Frame

You require the frame shown, made up of two brackets holding a horizontal



Details of the parts and their construction

'axle', at the one end of which is a four-armed cross and at the other a simple handle.

Fireworks like Catherine wheels and Roman candles are secured to the ends of the arms and ignited, the handle is turned and we have our moving set-piece. Although there are four arms, if we want to make things spin out, there is no reason why we should not only use two or even one. For a single Catherine wheel at the end of an arm, throwing out its usual big circle of light which in its entirety is describing another circle is in itself a novelty to watch, and adds something in the way of variety to the normal showing.

Two or more wheels at the arm ends form a real moving set-piece. Roman candles and other lights can be fixed to the arms as described in a moment—

even sparklers — with some very excellent effects.

## Construction

Now as to the construction of the very simple apparatus. As the frame may only be required for the one night, pieces can be used 'borrowed' from something else—to which they can be eventually returned. On the other hand you might like to make a more permanent article.

The axle (a) is an ordinary brush stale and if it is to be employed later for its rightful purpose it should be used now without cutting, which is really all to the better, for it keeps the operator well away from his fiery display. If desired, however, the stale could be rather shortened.

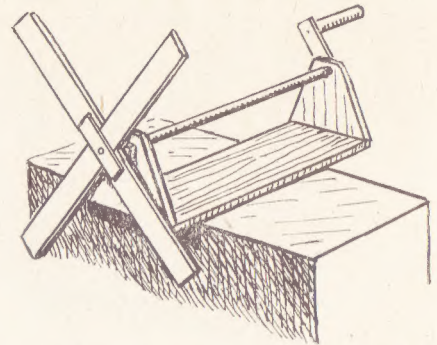
A stale is roughly 45ins. and so allowing for the spacers (g) and vertical ends. The base (b) will be 38ins. long, and to give good stability it should be 8ins. wide. This piece must be of sufficient thickness to take the ends firmly

without having to bother about angles. The ends (c) can be either triangular or rectangular but are 8ins. wide and the same height. If triangular they should taper down to 4ins. at the top. At about 1in. from the top in either case are bored the holes to take the brush stale, the necessary diameter being

taken from the stale in question.

The ends of the stale are squared, as shown, to take the cross at one end and the handle crank at the other. For the cross, lengths of wood 30ins. by 3ins. and about 3/4in. thick are used, these being joined at the middle (at right-angles) by a half joint. After which a square is taken out the same size as the squared end of the stale. The cross is finally fixed in position by the piece (d) on the outside which lies across the line of connection of the two pieces, three screws being inserted, one at either end and one in the middle going through into the end of the axle.

Now make the two 'spacers' (g) which are to go between the upright and the cross at the one end and the upright and the handle, at the other. These spacers are squares of wood, as



shown, bored out to fit nicely on the stale. To prevent splitting, bore out the holes first, then cut to squares to about 2 1/2ins. by 2 1/2ins. There is obviously some latitude in the size of these spacers as long as they do their job of preventing any danger of the cross or handle catching on the uprights.

Cross, axle and uprights can now be assembled and the handle at the far end fitted. This is made up of the crank (h) and grip (k). The crank is 12ins. long by 3ins. wide and of about 3/4in. wood to give stiffness, while the grip is about 8ins. long. The grip is fixed solidly to the crank with the single long screw shown, so it will turn in the hand. Holding the grip loosely, however, the fact of it turning in the hand will not be any disadvantage.

The handle is secured to the end of the axle exactly in the same way as the cross, the extra outside piece (m) in this case doing the locking.

## Wheel Display

To display Catherine wheels they are just fastened to the ends of the arm in the usual way with a short hat-pin or ordinary strong pin pushed in. To hold lights of one sort or another, the bulldog paper clips (p) are attached, at the back and end of each arm. They are held by a small screw each. With them candles, sparklers, etc., can be quickly fixed, either sticking straight out or set at right-angles to the arms.

All is now complete, but for use the frame must be put on some suitable support to bring the cross to about the eye-level, or a little above the eye-level of the spectators. To make things go well do not say before what the frame (if it is noted in the dark) will do, but let the movement of the blazing fireworks come as a complete surprise.

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interest readers in our  
advertisement pages



# Some fascinating tricks easily made by the HANDYMAN CONJURER

**H**ERE are two interesting tricks for the conjurer who is also a handyman. Both are of a mechanical nature but the necessary apparatus does not take very long to make.

The first trick is what we might call 'The Mystery Tin'. This article stands on the table. Raising the lid you proceed to fill it (the tin) with sand, or some such substance, talking the while about the new way you have discovered of making sweets.

When full the tin is tilted towards the spectators to show that it indeed has sand in it right to the brim. The lid is now put on and holding the tin between

of the required partition and this should be copied on to card and then cut out of thin tin with the addition of the tabs (a). These tabs are then turned up at right-angles (b) and the partition soldered in position, as shown in the right-hand diagram. A touch of solder at each of the tabs will do, the work being easy, as the tin will be bright and free from grease. Finally the whole container should be given a coat of bright enamel.

## Another Mystery

Spoken of as the 'Pillars of Solomon' the necessary items for the second trick consist of two apparently solid strips of wood, shaped at the top like gate posts. At the upper end a piece of cord seems

to run straight through the two by means of a hole from side to side.

The pillars, held in the hand, are exhibited and the cord pulled backwards and forwards to prove that there is 'no deception'. A knife is passed between the woods, apparently severing

hand holding the ends. This trick if put over slickly can be quite mystifying, but by making a rather more complicated pair of pillars things can be improved.

In the extension of the illusion you allow someone to note that you will not let go of the ends and guess that the cord goes through there. You appear indignant, and covered by the patter put the pillars down for a moment and then pick them up again, saying you will prove there is no deception.

Again you show an intact cord, cut with the knife and aver that the cord is severed. 'Let us see the other end' says the doubting one. 'All right' you exclaim 'if the gentleman insists' and you hold the pillars right apart with a section of cord hanging from each. The pieces are put side by side again and immediately the cord joins up, for it can be pulled out at one side and it disappears in at the other—obviously a continuous length.

## How it Works

Fig. 2 (B) gives the secret. The pillars are like the first, but have a really large channel taken out of the middle. Two pieces of cord are used, each having a small weight attached. Holding the tubes vertically, the weights fall to the

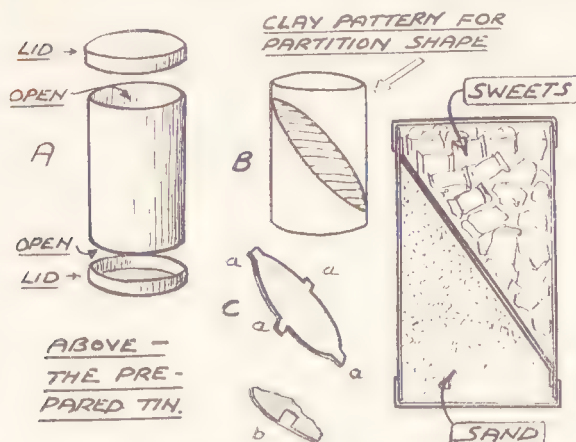


Fig. 1—Details of apparatus for the mystery tin

the hands (like a concertina) it is waved about and the lid once more removed. Behold it is now found full of sweets that can be handed round to any young folk in the audience.

Fig. 1 shows the secret. The tin is double-ended with two lids and a partition diagonally across the centre. Thus there are two divisions, the one already full of sweets and the other into which the sand is poured. In the waving about the tin is, of course, reversed and when set down the end with the sweets opened up.

## Making the Mystery

To make, any not-too-small patent food or cocoa tin will do, a second lid being procured from another discarded tin of the same kind.

With some care the bottom of the tin is removed and the second lid made to fit tightly. The lids must be fairly tight fitting to prevent accident, but those of most food tins are to start with. To get the right shape for the partition, push this out and slice the mould so formed diagonally as (B), starting a little way from the top and bottom.

The surface left (shaded) is the shape

of the cord. The pillars are even pulled apart and the holes shown on the inside, out of which cord would come if it were still intact but from which no cord now protrudes.

You now bring the pillars together, make some passes and the cord once more joins up and can again be pulled to and fro.

Fig. 2 (A) shows how this feat of joining a cut cord is done. Each pillar is drilled down its length, with horizontal openings (a) and (b) at the top and bottom. The cord is fed through one of the horizontal holes, down the centre boring, through to bottom 'sideways' hole into the next pillar, up through its vertical boring, and so out. The appearance of going straight through from side to side, however, is very complete.

As well as the holes (a) on the outside there are the holes (d) on the inside opposite the outer ones (really a continuation of them) and these are the ones you carefully point out when the pillars are slewed apart. Note that the pieces must only be slewed as shown, with the

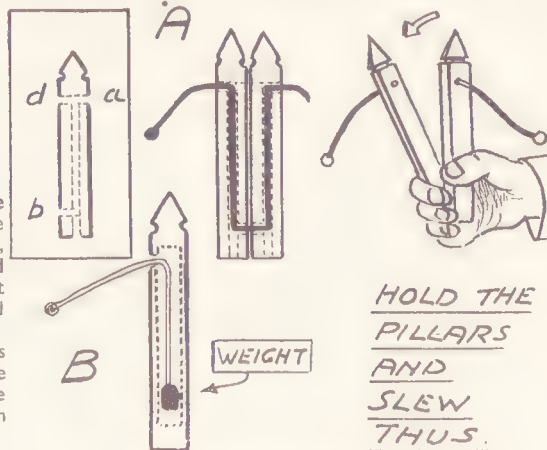


Fig. 2—How the 'Pillars' are made and operated

bottom, drawing in the cords. Pulling on them brings the weights back to the tops.

With practice it is possible to pull on one cord (the weight being at the bottom) and at the same time by tilting the other pillar allow that cord to be drawn in by its weight, which gives quite the impression of one connected piece. The taking right apart of the pillars, therefore, comes as a great surprise.

We have suggested using the two pairs of pillars, but, of course, the variation could be worked with the

(Continued foot of page 76)



# What the Entomologist needs in the way of HOME-MADE EQUIPMENT

**O**BTAINING perfect specimens of butterflies, their larvae and the like for the purposes of study and photography is a difficult task—and more often than not the specimens caught in the wild state by most of the recognised methods suffer in the process. The bloom of insects is removed, and often other blemishes are caused by the use of the net.

A simple and easily-made collection of bottles and breeding boxes serves the useful purpose of providing perfect specimens, while also allowing the opportunity of studying the various stages of growth and development.

## Large Breeding Cage

Fig. 1 shows a breeding cage with a glass panel at the front which allows clear observation. It can be made of four-ply or ordinary  $\frac{1}{2}$  in. boxwood, and should be approximately 1ft. square.

The top is of close mesh fine zinc sheeting; and may be slightly sloping. Round the edge of the front glue a layer of felt; the glass panel will slide against this and thus prevent escape of any particularly small specimens.

The glass panel itself slides out when required, and is kept in its normal position by means of two metal right angles fastened at the slides so that the panel rides inside them. Small clips of 2ins. made of brass, which will bend easily, do very well. They are set to



Fig. 2—Small breeding jars

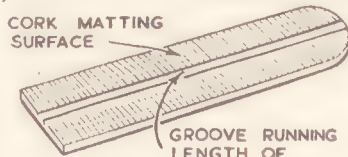


Fig. 3—A useful setting board

overlap the front of the cage by the thickness of the glass front.

Inside the cage a shallow tray is set at the bottom. A small seed-box or similarly constructed tray will serve, and it should fit as nearly as possible into the cage.

The tray is divided into two sections by means of a strip of wood down the

centre. One half of the tray is filled with earth and moss, kept fresh with a little moisture occasionally. The other half has a lid into which holes are drilled into which may be placed small bottles and tubes containing the plants and foliage upon which the specimens feed.

If desired, and to assist observation, a piece may be cut into the back of the cage and a piece of butter muslin glued over it. This allows more light to enter.

An easier breeding and observation receptacle can be made very simply from one of the large common pickling bottles. First remove the bottom of the bottle by tying a piece of string which has been soaked in paraffin round the bottle at the required point.

Light the string, and allow it to burn for a minute, then plunge the bottle into a bucket of cold water; the bottom should then fall off at the mark of the string. It is then placed in a tin as nearly as possible its own diameter (see Fig. 2). If it does not fit well, glue a piece of felt

round the tin as was done with the large cage. The tin itself should not be more than 2ins. deep.

Cover the top of the bottle with a fine mesh

zinc cap cut to fit, and in the bottom of it place some earth and moss, leaving a little space for one or two small bottles or tubes to contain the feeding foliage.

## Killing Bottles

A small handy, and effective killing bottle can be made from an ordinary jam

jar. Make a butter muslin cap for the bottle from a circle of the material and an elastic band tacked on to it. In the bottom place a small quantity of well crushed laurel leaves, and keep these in place with a circle of cardboard. When

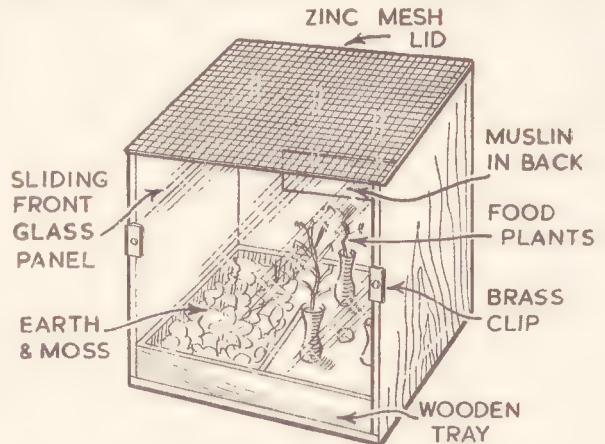


Fig. 1—A large breeding cage

in use always make sure that the leaves are newly cut and crushed.

A small quantity of cyanide of potassium with a cupful of plaster-of-paris poured over it and allowed to set also makes an effective base for a jam jar type killing bottle. It should be remembered that this is a poison, and the contents of the bottle should not be inhaled.

For large specimens a piece of blotting paper with a few drops of chloroform on it may be placed in the bottom of a jar, and covered with a circle of cardboard. This will prevent the wings of the specimens from picking up dampness from the blotting paper.

## Setting Boards

Simple setting boards are made by gluing a piece of cork matting to a board of the required size, then making a groove down the centre about  $\frac{1}{2}$  in. wide (see Fig. 3). Several of these can be made with grooves of varying widths to take variously sized specimens. A sharp knife or razor blade is best used for cutting the groove. (271)

## Handyman Conjurer—(Continued from page 75)

second pair only. It is much easier with the first pair, however, to give the impression of a continuous cord that there is some advantage in using them first, also it is good to have the simpler pair for times when it is not intended to work the more elaborate trick.

Now some points about making. Neither set of pillars must be too small, as they may have to be seen from some distance. The cord should be about the same as that used for pictures and made pliable by working through the hands. For the first pillars the holes can be

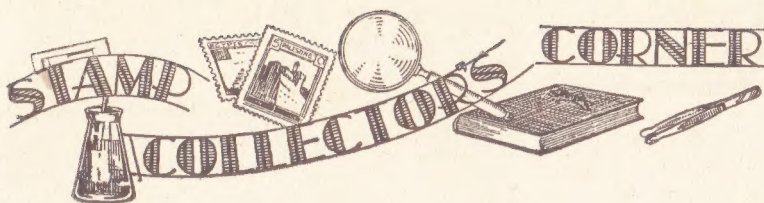
drilled, but for the second it is better to halve the pieces, chisel out the channel, and glue the halves together again. The design on the top, especially if using two sets, should be simple to allow of easy copying.

In working the variation, the pillars are, of course, changed when put down for a moment. The spot where they are placed must be out of sight, but this can easily be so behind gear on the table. The second pair are there and are picked instead of the first, the whole

action being covered with the patter that is just then taking the form of a rather heated argument with the critic.

If you think no one is likely to take you up, have an assistant ready to ask about the ends you will not show. An assistant can bring in his objections just at the right time and if some thought has been given beforehand, quite an entertaining dialogue might take place—all of which helps. Always remember that official conjurers never underrate the value of an assistant.





## More Birds on Stamps

**W**E have already considered those water birds which appear on stamps, swans, gulls, penguins, etc. Now let us consider some land and air birds. It may at first appear rather ridiculous to use the term land bird, but this is not so really. As an example, think of the bird shown on the first illustration, the Kiwi. It is a flightless bird so that it most certainly must be considered as a land bird.

### The Kiwi

But it is also remarkable for other interesting items—for one thing the size of the egg that it lays. Now a hen's egg that weighs  $2\frac{1}{2}$  ozs. is considered quite big, yet the kiwi which is no larger than the ordinary domestic fowl can lay an egg weighing  $11\frac{1}{2}$  ozs.—the record is 15 ozs. It would seem that we in England ought to try to keep a kiwi or two and that should solve the egg shortage!

Probably you will have noticed that the beak of a bird is pierced by two holes, one on either side. These are the nostrils and curiously enough their position varies in different kinds of birds. Most of them have the nostril at the base of the beak, but the kiwi is the only bird which has the nostrils situated at the end of the beak.

Now just a point about the stamp and not the bird. Compare the amount of cloud shown in each of these two stamps. Notice the difference? Well have a look at your duplicates; you may find that you have some of each.

### The Huia

New Zealand, however, gives us more than a kiwi. There is the huia and two of them are shown on the 3d. value of the 1898 stamp. Look at the beaks of these two and notice the difference in shape. Yet they are both huia birds; the upper one with the straighter beak is the cock and the lower with the decidedly curved beak is the hen. These birds are valuable because they feed on the grubs of the timber-boring beetle. The cock hammers and makes a hole in the bark and the hen probes around these holes with the curved beak and extracts any unsuspecting grub.

Two hawk-billed parrots or 'Kea and Kaka' appear on the 1/- value of the same set. These birds are most unpopular in New Zealand owing to the habit they have of alighting on the back of a sheep, digging the wool away and then tearing the flesh of the sheep, inflicting wounds which may ultimately cause death. Since the birds normally live on insects it is suggested that they developed the habit from mistaking a

sheep's back for a lump of lichen covered ground.

New Zealand also gives us the Pied Fantail—on the  $\frac{1}{2}$ d. value of the 1935 set. The 1/- of the same set gives us a picture of the Tui bird.

### The Kookabura

Australia gives us a number of birds, in addition to the swan we mentioned previously. There is the Kookabura which is shown on the 6d. stamps issued in 1913, 1932, and 1937. They are slightly different views of the same bird which also has other names—the 'Laughing Jackass' and also the 'Settler's Clock'. The latter is due to the fact that it seems to be very regular in its giving tongue at sunrise, noon and sunset.

From Australia also, on the  $\frac{5}{2}$ d. of the 1942 issue, comes the emu which you will sometimes see spelt emeu. This bird is frequently kept in captivity and makes a good pet. But if displeased it can deliver a very nasty outward and backward kick. It can also run at over

dark brown and grey. Only one egg is laid and the young one when hatched has a very thick down coat.

### Bird of Paradise

Another bird mainly noted for its plumage is the Bird of Paradise which we can see on the 2d. value of the pictorial issue from Papua, dated 1932. Another view is on all values of the 1931 issue from New Guinea.

From the same area of the world—the East Indies—we have a picture of another bird which displays itself as a natural part of courtship. On the 5c. stamp of the 1894 issue of North Borneo we have a picture of the Argus Pheasant. The courtship of this bird is somewhat peculiar. First the cock runs round the hen several times, stamping the ground as it goes. Then it suddenly stops and throws up its wings so they meet and form a screen such as you can see in the illustration. It is rather like our peacock except that the wings form the screen and not the tail or rather the tail coverts.



The Kiwi of New Zealand

Note Huia beaks

The Argus Pheasant

35 miles per hour, which is about twice as fast as a man can sprint when he is running a 100 yds. race. The nesting habits are curious for the cock undertakes the entire duty of incubating the eggs which entails sitting from 70 to 80 days.

The 1/- value of the 1932 stamps from Australia depicts a bird with a very beautiful plumage—the lyre bird. Its name obviously comes from the similarity of its tail to the musical instrument of the same name. The colour is

North Borneo gives us some more birds. One of them, the cassowary, is a large bird but its wings are useless for flight or for defence. The bird uses its legs for both. Another bird from North Borneo is the cockatoo which surely does not need any description whatever. We notice also quite a number of countries which show pictures of parrots. One of the best of these is the 2/6 value stamp of Togo.

### The Quetzal

Guatemala on many of her issues gives a picture of the quetzal, a bird with some peculiar habits. For one thing it does not make a nest, it bores a hole in a stump of a tree and in this places two or four eggs. It is also a most beautifully coloured bird, iridescent green above with blue on the tail coverts and a green throat.

These are a few of the birds that can be found on stamps, but there are many more and a very good stamp competition could be made by making a list of birds, asking the competitors to list the countries from which they come—Try it for yourself!

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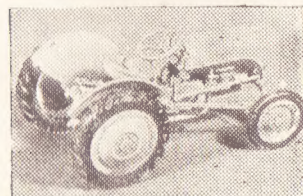
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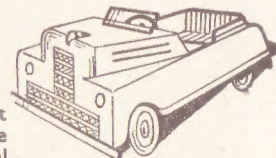
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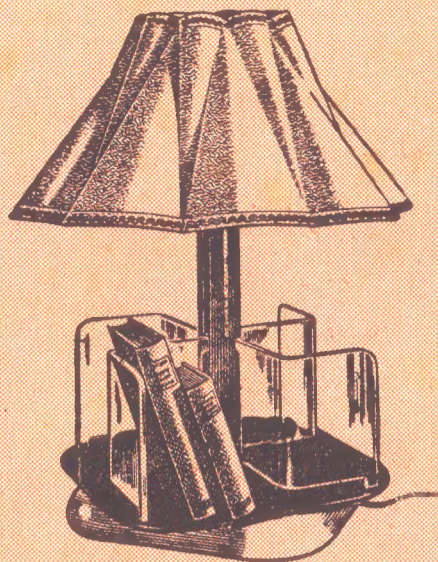
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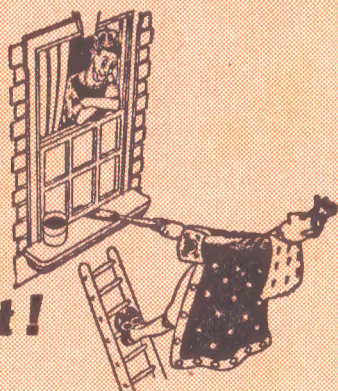
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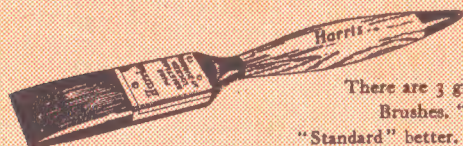
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the paint brush with a name to its handle

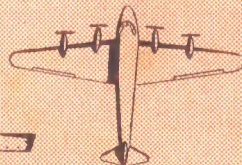
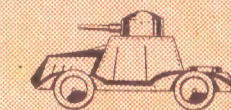


There are 3 grades of Harris Brushes. "Junior" good. "Standard" better. "Super" best.

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